Bausch & Lomb

BALPLEX PLOTTER

U. S. Patent Office
AUG 19 1955
Design Division

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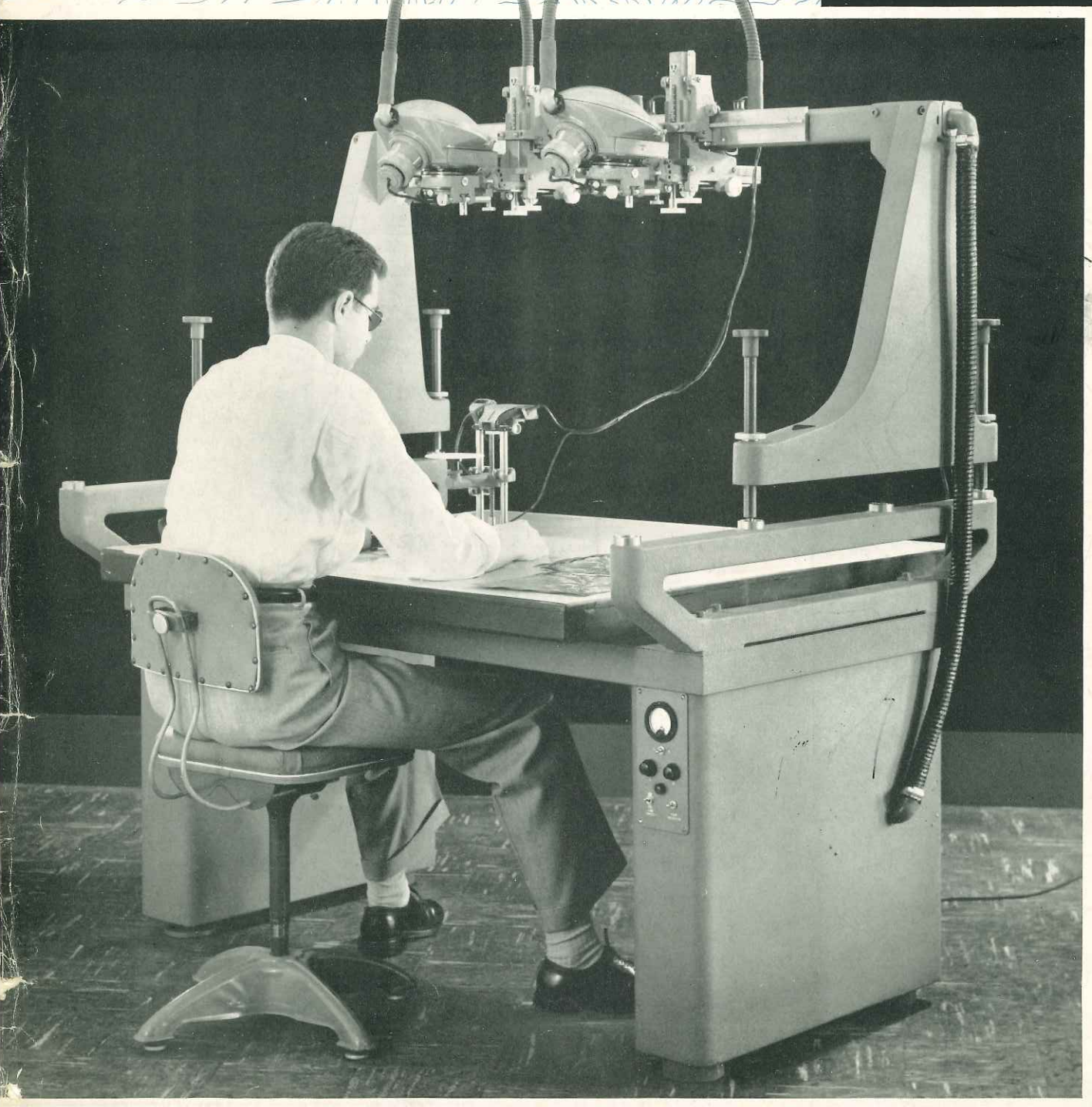
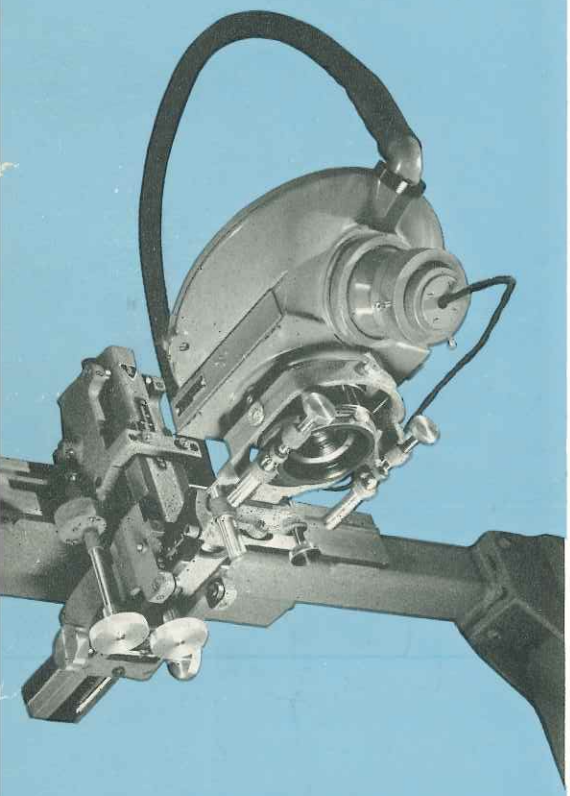


BAUSCH & LOMB OPTICAL CO., ROCHESTER 2, N. Y.

Bausch & Lomb BALPLEX PLOT



Incorporating the projector design of R. K. Bean, U. S. Geological Survey, the new Bausch & Lomb Balplex Plotter represents the fastest and most economical mapping equipment. This complete, extremely compact unit takes from two to four projectors using diapositives reduced 2.78 times from the 9 x 9 inch negatives and printed on glass plates 110mm x 110mm in size. Consequently, there is no significant loss of detail. Original image definition is maintained in the Balplex Model at the high magnification factor of 3.4×. Extremely accurate maps at plotting scales as large as 1 inch = 50 feet are readily produced.

ASSURES ACCURATE MAPS

The Balplex Projectors provide even illumination over the entire model—color corrected for sharpest contrast in detailed plotting. Push button controls permit instant change of relative intensities of red and blue to assure proper balance for stereoperception.

PROFITABLE OPERATION TODAY AND TOMORROW

Balplex handles vertical, convergent and oblique photography flown as low as 1000 feet or as high as economically practical, say35,000 feet. Resultant plotting scales can be 1:600 to 1:20000. Extending and bridging operations, as well as mapping of individual models, are carried out with vertical photography of 55% to 70% overlapping consecutive exposures. High efficiency and vertical accuracy are assured when using 100% overlapping, converging vertical pairs, resulting in a base height ratio of 1.2. The 20° tilt bracket takes care of this anticipated technique.

Oblique photography is accommodated by the projectors' tilt range of up to 60°. High oblique, as in Trimetrogon photography, can be plotted with the Balplex.

ECONOMICAL EXTENSION OF CONTROL

The Balplex Plotter will accommodate four projectors used with vertical photography, and if longer extensions are desired, the projectors may be used on the seven foot and fourteen foot Multiplex Frames. The design of the brackets was purposely standardized for the convenience and economy of those who already have these frames in use. A suitable means to raise the frame and enlarge the mapping surface to accommodate the longer projection distance and the larger model size will be necessary.

SIMPLE, CONVENIENT OPERATION

Image clarity, easily seen detail and a handy-sized model make the Balplex operation pleasantly non-fatiguing. The mapping table is slate (42 x 48 inches), and fully accessible from either back or front. Freedom from mechanical linkages or obstructions relieve the operator from worry over disturbed calibration and adjustments.

No new technique need be learned to operate this plotter. Time-tested Multiplex principles of adjusting swing, tilt and tip are used. Maintenance costs are minimized and no recalibration is required.

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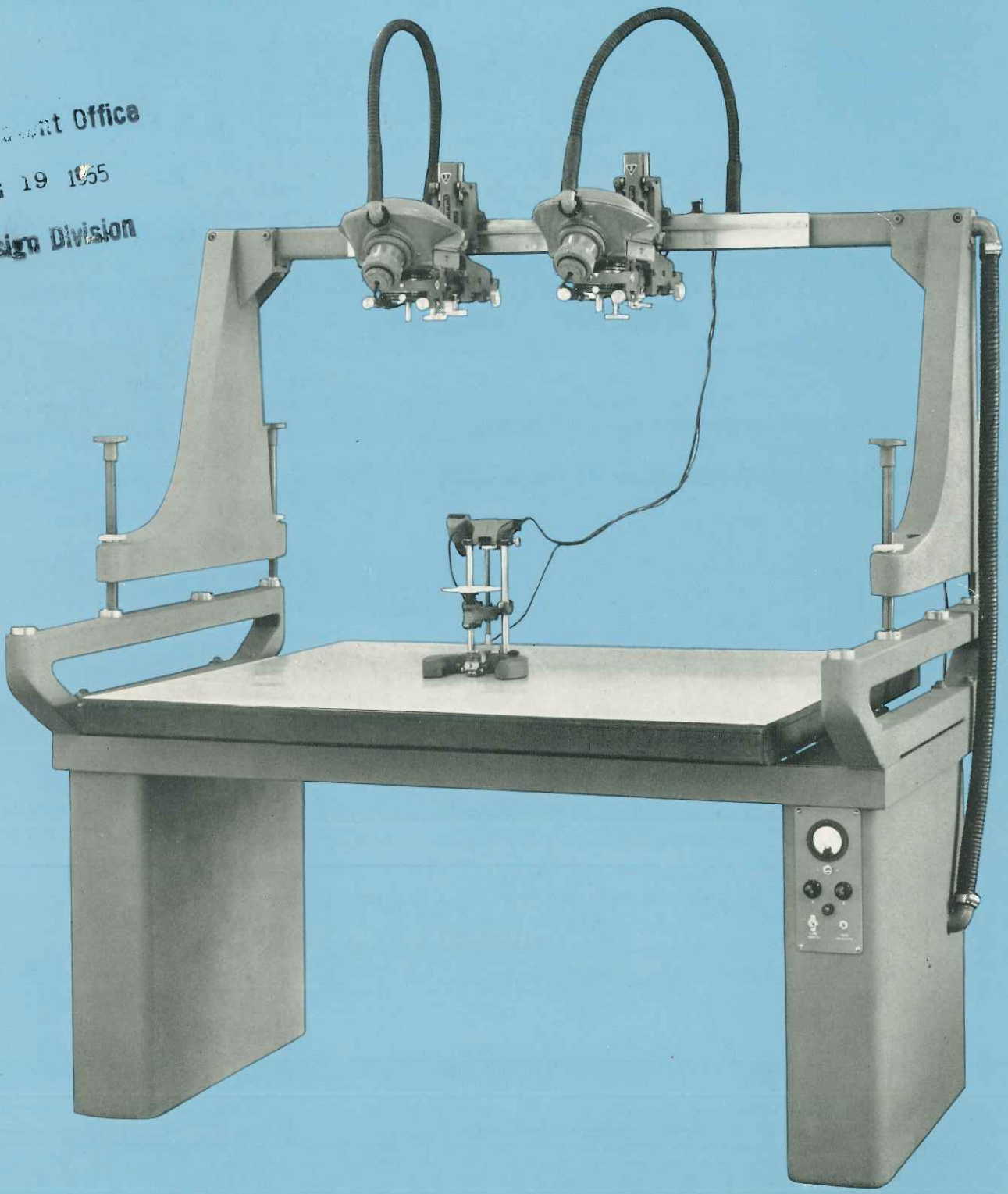
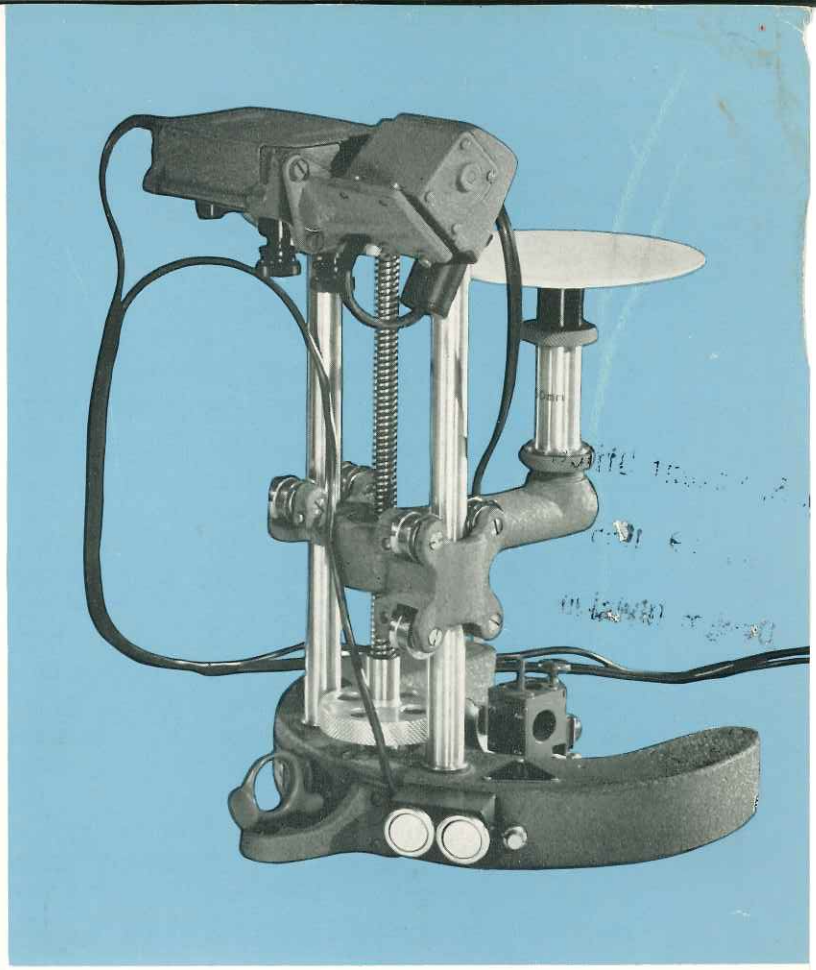


PRECISION PLOTTING WITH EASE AND ECONOMY

UNIVERSAL TRACING TABLE



Accuracy in the final result—the translation of the stereoscopic image into contours and other features on a map or chart—is further assured by the precise functioning of this tracing table. Operation is almost entirely mechanical to reduce the introduction of human error to the lowest possible level. Two models of the Universal Tracing Table are available—one having a counter reading in feet of elevation, the other, in meters of elevation.

To insure quick and simple achievement and maintenance of stereoperception, two push button controls, conveniently located at the rear of the base, permit instant change of the relative intensities of red and blue light.

A wide range of plotting scales are possible with the Universal Tracing Table. One set of interchangeable gears is supplied with each table, which can be arranged in various combinations to furnish a sequence of desirable mapping scales. To provide a greater variety of scales in the same range, a set of supplementary gears is available, at extra cost, for use with the foot reading table only.

The lead holder, located directly below the floating mark, is quickly and easily centered. Fingertip control raises or lowers the lead and two lamps, located in the ends of the horseshoe shaped base, illuminate the surrounding area. These lamps and one in the counter are controlled by a convenient microswitch.

A small cone shaped sapphire, embedded in the lacquer in the center of the platen supplies the point of light which acts as the "floating mark." The tip of the sapphire diffuses the light to make it visible to the operator from any angle without change of intensity. When necessary, because of density changes in different areas of the image, light intensity can be varied by means of a rheostat.

Particular care has been given to the design of the tracing table carriage to assure maximum ease of movement. Accuracy of the operator's work is directly proportional to smooth travel and free movement of the carriage. For this reason it rides on ball-bearing rollers adjusted to make firm contact with the upright columns. Fingertip pressure on the knurled wheel at the base of the elevating screw controls the vertical travel through a range of 125mm. A 50mm extension increases this range to 175mm, when required.

Special agate foot pads support the table and permit movement of the table over the map sheet with greatest precision and a minimum of effort. Non-abrasive, the foot pads will not erase contour lines.

The Diapositive Centering Device provides a convenient method for centering the diapositives in the plate holders, which are interchangeable on all projectors.

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TRUE SCALE STEREOSCOPIC MODELS WITH PRECISION AND SPEED

It is a simple matter to produce distortion-free diapositives with the Bausch & Lomb Reduction Printer. Two conveniently read scales assure quick, accurate setting of the reduction factor of the printer to correspond with the focal length of the particular camera lens used. The scales are engraved to indicate camera lens focal length. Thus, if the photography was done with a camera lens of 153.6mm focal length, setting both scales at this figure automatically insures the correct reduction ratio.

The multiple light source is made up of 37, 15-watt, filament lamps, cooled by twin blowers. A heat absorbing glass and an opal glass diffusing screen between the lamps and lower pressure plate prevent damage to negatives and assure uniform illumination.

Density differences in the film negative are quickly equalized by the arrangement of switches controlling the multiple light source. A master switch controls all lamps, and circuit switches control each of three separate circuits. In addition, there is a switch for each individual lamp, affording "pin-point" control. A gradient density filter between the lens and diapositive plate compensates for radial differences in light intensity. Thus, with the proper choice of high or medium contrast diapositive plates, the operator is assured of diapositives having a uniform over-all density.

SPECIFICATIONS AND PRICE LIST FOR BALPLEX PLOTTER

Cat. No.		Price
53-43-02-03	**BALPLEX PLOTTER** Includes: A base, supporting frame, slate mapping table 42″ x 48″, two 53-43-02-34 Projectors, one 53-14-76-02 Universal Foot Reading Tracing Table, 2 extra projector lamps, 4 extra tracing table lamps and a plastic cover for the tracing table. A 53-14-75-01 Metric Universal Tracing Table may be substituted at no additional cost, if desired.	$4250.00 ea.
53-43-02-34	**BALPLEX PROJECTORS** Extra projectors may be purchased in pairs, and may be used for stereo triangulation on a standard Multiplex Frame, with proper provision to raise the frame and to enlarge the mapping surface to accommodate the longer projection distance and the larger model size.	$2160.00 per pr.
53-43-12	**DIAPOSITIVE CENTERING DEVICE** One centering device, which will serve for any number of plotters, is required for positioning the diapositives in the plate holders. This should be purchased with the first plotter, but may be omitted with subsequent additions.	$250.00 ea.
53-23-55	**BALPLEX PRINTER** **For Distortion-Free Photography** With 6″ Metrogon Corrector plate Without corrector plate The printer, having a reduction ratio of 153/55 is distortion-free for use with 6″ Planigon or other 6″ distortion free photography. A corrector plate, which is optional, can be supplied if the printer is to be used with 6″ Metrogon photography.	$6500.00 ea. 5500.00 ea.

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PRICES—Prices are subject to change without notice. Orders are subject to acceptance at Rochester, N. Y., U. S. A., at prices prevailing at time of shipment. Orders for standard items may be cancelled if not wanted because of price advance. Excise taxes or other governmental charges will be added wherever applicable. Shipments to points outside Continental United States of America and to its territories, dependencies and possessions, except Hawaii and Alaska, are not subject to excise taxes. Delivery dates are estimated and cannot be guaranteed.

TRANSPORTATION CHARGES—Unless otherwise stated on a B&L quotation, all purchases of photogrammetric equipment are f.o.b., Rochester, N. Y., U. S. A. Shipping charges on products sent on memorandum are not prepaid. There is no charge for packing, unless otherwise stated. Products made on special order cannot be forwarded c.o.d.

BAUSCH & LOMB OPTICAL CO.
ROCHESTER 2, NEW YORK, U. S. A.

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